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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,653	07/02/2004	Masanobu Mizusaki	70404.27	2884

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EXAMINER

THOMPSON, CAMIE S

ART UNIT	PAPER NUMBER
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1774

NOTIFICATION DATE	DELIVERY MODE
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05/18/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JKEATING@KBIPLAW.COM
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Office Action Summary

Application No.

10/500,653

Applicant(s)

MIZUSAKI ET AL.

Examiner

Camie S. Thompson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed February 13, 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 30-36 is/are allowed.
- 6) ☒ Claim(s) 18-23 and 28 is/are rejected.
- 7) ☒ Claim(s) 24-27 and 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/13/2007.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

1. Applicant's amendment and accompanying remarks filed February 13, 2007 are acknowledged.
2. Examiner acknowledges newly added claims 35-38.
3. The rejection of claim 18 under 35 U.S.C. 103(a) as being unpatentable over Heeger et al., U.S. Patent Number 6,534,329 is withdrawn due to applicant's argument.
4. The rejection of claims 18-23 and 27-28 under 35 U.S.C. 103(a) as being unpatentable over Heeger et al., U.S. Patent Number 6,534,329 in view of Jang et al., *Dendritic Physical Gel: Hierarchical Self-Organization of a Peptide-Core Dendrimer to Form a Micrometer-Scale Fibrous Assembly* is withdrawn due to applicant's argument.
5. The rejection of claims 18, 24-25 and 29-34 under 35 U.S.C. 103 (a) as being unpatentable over Heeger et al., U.S. Patent Number 6,534,329 in view of Jang et al., *Dendritic Physical Gel: Hierarchical Self-Organization of a Peptide-Core Dendrimer to Form a Micrometer-Scale Fibrous Assembly* and in further view of Slater, Jr. et al., U.S. Pre Grant Publication 2005/0194603 is withdrawn due to applicant's argument.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

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international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 18, 21 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Swager et al., U.S. Patent Number 6,783,814.

Swager discloses shape-persistent organic molecules, including polymers that can be used in liquid crystal displays (see column 2, lines 53-68). Additionally, the reference discloses that hyperbranched monomers may be used (see example 4). It is disclosed in column 15, lines 29-60 that alignment of the polymers is self-organized and that emission of polarized light results. The Figures in the Swager reference show dendritic molecules used. The reference also discloses in column 15 that the hyperbranched molecules can be used in light emitting diodes.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 18-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Swager et al., U.S. Patent Number 6,783,814.

Swager discloses shape-persistent organic molecules, including polymers that can be used in liquid crystal displays (see column 2, lines 53-68). Additionally, the reference discloses that hyperbranched monomers may be used (see example 4). It is disclosed in column 15, lines 29-60

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that alignment of the polymers is self-organized and that emission of polarized light results. The Figures in the Swager reference show dendritic molecules used. Swager does not specifically disclose that the hyperbranched polymers are rod-shaped or disc-shaped. However, Swager does disclose that the hyperbranched polymers can have two-dimensional or three-dimensional shape, which would include rod and disc-shaped polymers (also shown by Figures in the reference). Therefore, it would have been obvious to one of ordinary skill in the art to have the hyperbranched polymers of the Swager reference be rod-shaped and disc-shaped due to their structures provided by the reference.

10. Claims 18 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swager et al., U.S. Patent Number 6,783,814 in view of Jang et al., *Dendritic Physical Gel: Hierarchical Self-Organization of a Peptide-Core Dendrimer to Form a Micrometer-Scale Fibrous Assembly*.

Swager discloses shape-persistent organic molecules, including polymers that can be used in liquid crystal displays (see column 2, lines 53-68). Additionally, the reference discloses that hyperbranched monomers may be used (see example 4). It is disclosed in column 15, lines 29-60 that alignment of the polymers is self-organized and that emission of polarized light results. Swager does not specifically disclose self-assembly by hydrogen bonding or electrostatic interactions. Jang discloses hyperbranched macromolecules that have three-dimensional shapes and have self-assembly by hydrogen bonding and electrostatic interactions (see page 3232). The

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hydrogen bonding and the electrostatic interactions allow for the polymer to have an alignment of 0.95 or more. Therefore, it would have been obvious to one of ordinary skill in the art to have the polymers of the Swager reference have self-assembly through hydrogen bonding and electrostatic interactions in order to have an LED that emits polarized light.

11. Claims 24-27 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not teach or suggest the recited organic EL device, further including a wall structure having a side face roughly perpendicular to a surface of the hyperbranched polymer layer, wherein the hyperbranched macromolecules are roughly parallel with the side face by of the wall structure.

12. Claims 30-36 are allowed. The prior art does not teach or suggest a method for fabricating an organic EL light emitting device, that emits polarized, having an organic EL light emitting layer and an electrode for applying a voltage the light emitting layer wherein the steps comprise:

- (a) preparing a substrate having an electrode formed on its principal plane;
- (b) forming a wall structure on the principal plane; and
- (c) providing a hyperbranched macromolecule on the principal plane to form the light emitting layer wherein the hyperbranched macromolecules are aligned roughly parallel with the side face of the wall structure.


Response to Arguments

13. Applicant's arguments with respect to claims 18-36 have been considered but are moot in view of the new ground(s) of rejection.

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Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (571) 272-1530. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena L Dye, can be reached at (571) 272-3186. The fax phone number for the Group is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


RENA DYE
SUPERVISORY PATENT EXAMINER
AU 1774